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Is Hunger in the World on the Rise?

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In its latest report on food insecurity, the FAO asserted that 915 million people were undernourished in 2008, and the figure is estimated to rise to 1.02 billion in 2009. The alarming numbers raise the twin questions of how the estimates are derived and how reliable they are.

An accurate assessment of the overall prevalence of undernutrition is important for monitoring progress on the Millennium Development Goals. Policy-makers also need a solid basis for deciding the type of interventions required to improve the situation.

The FAO's Findings

The UN Food and Agriculture Organisation's report entitled *State of Food Insecurity 2009* estimated that 1.02 billion people could be undernourished by the year's end. This is a huge increase since 1995-97, when the estimated number was down to 803 million, after a steady decline over two decades. Moreover, the report suggests that, as a share of the total population in developing countries, the undernourished have increased from 16 to 18 percent since 2004-06. The alleged increase has been especially rapid in 2008 and 2009 in the wake of rising food prices and the global economic crisis (see Figure 1 overleaf).

The FAO's Methodology

The FAO's estimates are based on the availability of food in individual countries (own production and net imports). The calorie content of the various food items is obtained from standardised conversion tables, and the distribution of the available calories across households in a country is estimated from household food consumption surveys. Finally, the FAO establishes a norm for the minimum per-person calorie requirement of an average household. The households that have an intake of calories below the norm are classified as undernourished.

The first thing to note is that the estimations require a lot of data. However, each step in the FAO's calculations is based on more or less ambiguous assumptions and data that have weak empirical underpinnings. In some instances the data are indeed downright non-existent.

Food availability is notoriously difficult to estimate in countries lacking scientifically based methods for acreage inventory (enumeration) and crop yield assessment, as is the case in most African countries. Moreover, the FAO estimate of undernourishment in the world in 2009 builds mainly on food production assessments from 2004-06. The distribution of calories across households in each and every country is estimated on the basis of a handful of food consumption surveys, most of which were conducted in half a dozen countries some twenty years ago.

A further methodological flaw in the FAO estimates is that no explicit consideration is made of the fact that energy (calorie) expenditures, not only intakes, vary across households. Households have different per-capita calorie requirements (expenditures) because they differ in terms of age and gender composition, as well as the amount of calories burnt in physical activities, such as work. People become undernourished when their habitual calorie intake falls short of what they require to maintain a healthy body weight and to sustain the work needed to earn an income. When this is the case, the imbalance between energy intake and outtake (expenditures) shows up in loss of body weight (at all ages) and retarded skeletal growth in children (stunting). These dismal consequences are measured by anthropometrics.

In order to estimate the prevalence of undernutrition in a country with its own method in a theoretically correct way, the FAO would have to know not only the distribution of calorie intakes across households, but also how this is related to the distribution of calorie expenditures. Such data have never been collected and the FAO simply assigns an arbitrary value to this crucial parameter in its estimations.

All this means that the FAO calculations of undernutrition are utterly unreliable. Robustness tests reveal that even very small alterations in the uncertain values of the main parameters in the FAO model have large effects on estimated undernourishment. In light of this, to produce an exact estimate of 1.02 billion undernourished in the world in 2009 conveys an impression of rigour that is totally illusionary.

Different Indicators, Different Results

There is no doubt that undernutrition is highly prevalent in many developing countries. Anthropometric indicators, based on the measured height and weight of individuals, are the current standard tools for estimating its extent. We have anthropometric estimates of the prevalence of child and, to a lesser extent, maternal undernutrition for most developing countries in the mid 2000s. According to these estimates, about 30 percent of the children were stunted (short for age) and 25 percent were underweight (low weight for age). These numbers are considerably higher than the 16 percent of the total developing country population that the FAO estimated to be undernourished in 2004-06.

Furthermore, the regional difference between the FAO estimates and those derived by the anthropometric method is often strikingly large. The FAO arrives at an estimate of 23 percent of the population in South Asia being undernourished and 30 percent in Sub-Saharan Africa in 2004-06. The anthropometric evidence suggests the opposite ranking, i.e. the prevalence of child undernutrition as measured by weight for age in 2005 was almost twice as high in South Asia (40 percent) as in Sub-Saharan Africa (24 percent).

At the level of individual countries, the FAO and anthropometric estimates are also often impossible to reconcile, as a few examples

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may illustrate. The agency estimated that in Nigeria, the most populous country in Sub-Saharan Africa, only 8 percent of the population was undernourished in 2004-06. In roughly the same years, 42 percent of the children were stunted and 25 percent underweight, while 15 percent of women were underweight. In India, the country with the highest prevalence of underweight young children (43 percent), as well as adult women (36 percent) and men (33 percent), 'only' 23 percent of the entire population was undernourished according to the FAO.

In most countries for which anthropometric data have been collected at two or more points in time (about 120), the incidence of undernutrition has declined.

In about half the countries, the pace of progress indicates that they are on track to accomplish the Millennium Development Goal (MDG) of halving 'hunger' between 1990 and 2015. In many other countries, including India and most countries in Sub-Saharan Africa, the decline has been disappointingly slow and on recent trends, the MDG will be missed. Although some 20 countries have made no progress, a few others – most notably populous China, but also Ghana, Malaysia and Mexico – have already attained the MDG.

Unfortunately, anthropometric surveys are carried out rather sporadically in most countries and so far only a few have been conducted and completed since 2008. This means that there is yet little possibility to gauge whether the recent food-price hike and the ongoing global economic crisis have seriously affected the nutritional status of vulnerable populations.

There are, however, anthropometric surveys from three African countries, Egypt, Ghana and Nigeria, carried out in 2008, that provide indications. In Egypt, the incidence of child stunting and child underweight increased by 4 and 1 percentage points from 2005. In Nigeria there was a small decrease, while Ghana experienced a notable decline in both indicators —when compared to 2003. The little anthropometric evidence at hand presently does hence not corroborate the drastic rise in 'undernourishment' reported by the FAO.

Why Do Methods Matter?

Why should we put more trust in anthropometric indicators than in the FAO's estimates? A major advantage with the anthropometric estimates is that the data are simple to obtain free of measurement error, as only a few pieces of information are required (height, weight and age). This is also important for the transparency of monitoring undernutrition.

Moreover, anthropometric measures provide useful tools for directing policy. In order to be able to design and target interventions in an efficient manner, governments need reliable answers to a number of questions. They need accurate knowledge of how widespread undernutrition is, where it is concentrated, who the undernourished are, and why people are undernourished. For instance, if the incidence of undernutrition is very high – say half the population –interventions have to be undertaken at the national level (e.g. through lowering consumer food prices). If the prevalence is smaller, 10-15 percent, interventions can be targeted directly to those in need (if identified). This is what Brazil and Mexico have successfully done in recent years through well-targeted conditional cash transfer programmes.

The FAO method is silent on most of these questions. As the agency admits itself, its method is only aimed at estimating the *share* of households in a country that falls below its calorie norm; undernourished individuals or groups of people cannot be identified.

Poverty, Not Availability, Is the Problem

Finally, on the question of the underlying reasons for undernutrition, the FAO analysis is misleading. The chief reason, as estimated by the FAO method, is insufficient availability of food in a given country. However, extensive empirical research has convincingly demonstrated that the foremost reason is poverty, but also maternal illiteracy and subjugation, and inadequate basic health-care facilities. Except in connection with wars and large natural disasters, there is no scarcity of food in any country for those who can afford to buy it. The main problem is affordability, not availability as purported by the FAO.

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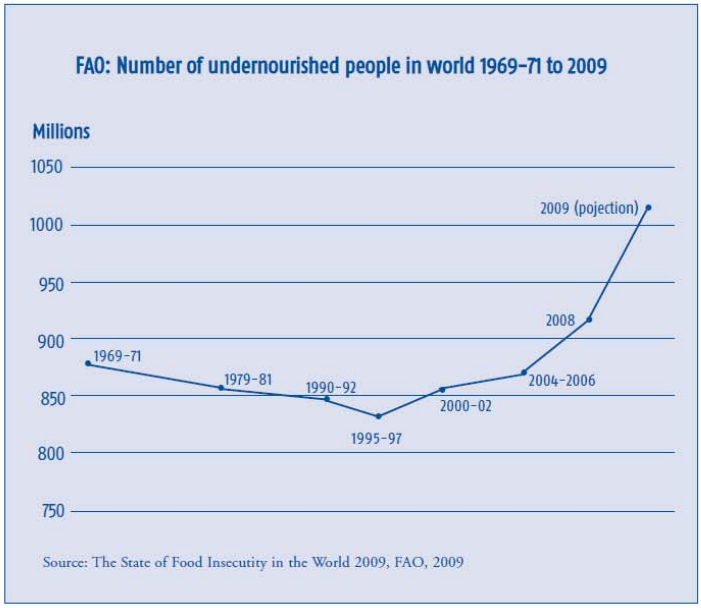
Figure 1



Source: The State of Food Insecutity in the World 2009, FAO, 2009